

**BIOLOGY E-LEARNING SYSTEM  
(SPM STUDENT)**

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## **ABSTRACT**

The E-learning system is an important field in the area of information communication technology for online learning. In Malaysia, the E-learning system is very popular. Traditional teaching method in secondary school causes some problems to student. Students have to bring a lot textbooks to school every day and sometime the weight goes up very heavy to carry every day. With the growing of Information and Communication Technology (ICT) in Malaysia, this situation should be changed. The Biology e-learning system can provide the solution for the above situation. There are three targeted users groups in this system which is admin, teacher and student. Firstly, admin are able to manage students and teachers record. Secondly, students are able to view their profile, update on their profile and view their result mark or study performance. They are also able to view extra notes, quiz and exercises from the system uploaded by their teachers. Thirdly, teachers are able to upload and view their student result and give comment according to their performance. Besides that, they are also able to upload extra notes, questions and exercises to the system according to subject of Biology. The entire user groups are able to take part in the interface discussion through forum especially student to student and student to teacher. Rapid Application Development (RAD) has been chosen as the methodology to develop this system which is planning, analysis design and development, testing and implementation. Adobe Dreamweaver CS5 will be used to develop this system. Security features like session registration will be implementing in this system, to make the system more secure. I believe at the end, this system could be suitable to implement in school if the SMK Sentul Convent are equipped with enough and suitable computer to run the system in order to increase the competitiveness of the school.

## **ABSTRAK**

Sistem E-pembelajaran adalah satu bidang yang penting dalam bidang teknologi komunikasi maklumat untuk pembelajaran dalam talian. Di Malaysia, sistem E-pembelajaran adalah sangat popular. Kaedah pengajaran tradisional di sekolah menengah menyebabkan beberapa masalah kepada pelajar. Pelajar perlu membawa buku teks banyak ke sekolah setiap hari dan kadang-kadang berat buku naik sangat berat untuk membawa setiap hari. Dengan penanaman Teknologi Komunikasi dan Maklumat (ICT) di Malaysia, keadaan ini perlu berubah. Sistem e-pembelajaran Biologi boleh memberikan penyelesaian bagi situasi di atas. Terdapat pengguna yang disasarkan tiga kumpulan dalam sistem ini yang admin, guru dan pelajar. Pertama, admin, dapat menguruskan pelajar dan guru rekod. Kedua, pelajar dapat melihat profil mereka, mengemas kini pada profil mereka dan melihat tanda hasil atau prestasi pengajian. Mereka juga dapat melihat nota-nota tambahan, kuiz dan latihan daripada sistem yang dimuat naik oleh guru-guru mereka. Ketiga, guru-guru boleh memuat naik dan melihat hasil pelajar dan memberikan komen mengikut prestasi mereka. Selain itu, mereka juga boleh memuat naik nota-nota tambahan, soalan dan latihan kepada sistem mengikut subjek Biologi. Kumpulan-kumpulan pengguna keseluruhan boleh mengambil bahagian dalam perbincangan antara muka melalui forum terutamanya pelajar kepada pelajar dan pelajar dengan guru. Permohonan Pembangunan Rapid (RAD) telah dipilih sebagai kaedah untuk membangunkan sistem ini yang merancang, reka bentuk analisis dan pembangunan, pengujian dan pelaksanaan. Adobe Dreamweaver CS5 akan digunakan untuk membangunkan sistem ini. Ciri-ciri keselamatan seperti pendaftaran sesi akan melaksanakan dalam sistem ini, untuk membuat sistem yang lebih selamat. Saya percaya pada akhirnya, sistem ini boleh menjadi sesuai untuk melaksanakan di sekolah jika SMK Convent Sentul dilengkapi dengan komputer yang mencukupi dan sesuai untuk menjalankan sistem untuk meningkatkan daya saing sekolah.

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## **ABBREVIATIONS**

- UML** – **Unified Modeling Language**
- SPM** – **Sijil Pelajaran Malaysia**
- PHP** – **Hypertext Pre-processor**
- HTML** – **Hypertext Mark-up Language**
- RDBMS** – **Relational Database Management System**
- OODBMS** – **Object oriented Database Management System**
- DDML** – **Data definition and Manipulation Language**

## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Background of Study**

E-Learning is a system is representing Biology E-learning system for SPM students of SMK Sentul Convent. Nowadays, there are a lot of online education systems in Malaysia. The main purpose of those systems is to provide a better and effective way to help students to get learning materials and information.

In this project, a web base learning management system also known as e-learning management system will be developed for the secondary school. Purpose of this system is to enable teachers and students access the study materials at anytime and anywhere.

## **1.2 Problem Statement**

- i. Current teaching method more individualistic (a teachers teaching method) and student find boring and less interactive.
- ii. Student spends a lot on buying study materials and extra classes like tuitions.
- iii. There is time limitation for the student to communicate with teacher.

## **1.3 Objective**

Objectives of Biology E-Learning system are:

- i. To design and construct a database that supports the Biology E-Learning System.
- ii. To gather and analyze the requirements for the e-learning system and provide a medium for discussion and communication between student and student or student and teacher.
- iii. To develop a web-based e-learning Biology system for secondary school.

## **1.4 Scope**

The Biology E-Learning System project consists of three modules(SPM student module, Teacher module and administrator module) which are only for the SPM science stream students of SMK Sentul Convent whom taking biology subject.

Targeted user of this project output is admin, teacher and student of form five. Student from selected secondary school initially selected in order to improve the overall Biology e-learning system. Adobe Dreamweaver CS5 will be use as main tool to develop this Biology e-learning system for SMK Sentul Convent.



## **1.5 Thesis Organization**

There are 6 chapters included in this thesis.

### **i. Chapter 1**

This chapter is to introduce to the readers about the project that will be developed later. This chapter contains introduction, problem statement, objective, and scope and thesis organization.

### **ii. Chapter 2**

This chapter explains about the reviews for the chosen project. This chapter is divided into two sub reviews that require students to study to get complete information about the project.

### **iii. Chapter 3**

In this chapter the approach and framework for the project, method, technique or approach that will be and will be used while designing and implementing the project will be included in the content. Justification and of method on approach used and hardware and software necessary is stated here.

### **iv. Chapter 4**

This chapter acts to document all processes that involve in the development of the project. Designed project development is explained here. The content of this project depends on the system. It contains information of database and tools used. Data in database is shown in this chapter.

**v. Chapter 5**

The purpose of this system is to explain about the results and data analysis that had been acquired. Result analysis, project limitation and suggestion and project enhancement are contents for the chapter.

**vi. Chapter 6**

This chapter explains briefly and summarizes the developed project.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

Literature review is a summary of the previous researches on all the related resources to a project. Resources are taken from books, internet, journal and online resources. In this chapter, a review of existing system is carried out. The literature reviews in this report are based on existing applications. Therefore, these reviews will be helpful in designing the methodology. Besides that, some of the techniques, methods, equipment and technologies from the reviews are very useful and can be applied into this project.

The main issues will be reviewed on this project is the end-users which are SPM students, teacher and admin. This research will help in understanding the system development for this project.

## 2.2 Existing System

E-Learning is the use of technology to enable people to learn anytime and anywhere. E-Learning can include training, the delivery of just-in-time information and guidance from experts. The target user for this E-Learning system is SPM biology student. Therefore the teacher will provide notes and learning materials to the student through the system. Student will be able to download the notes uploaded by the teacher. This system provides the student to communicate with teacher by messaging in discussion board. It also contains quiz which can help student to increase their knowledge.

In this section, the research on the existing website that has been developed in the internet will be discussed. This report will show two example of existing website that is related to the E-Learning. This report also will generally describe the E-Learning system. This research is mainly on how the existing system works.

### 2.2.1 E-Learning for biology

E-Learning for biology is a successful example of E-Learning system. It is a learning platform design specifically for biology in school of science, university, and in lifelong learning. The system has particular chapters then student can take the quiz to check their performance after reading the notes published in html form.

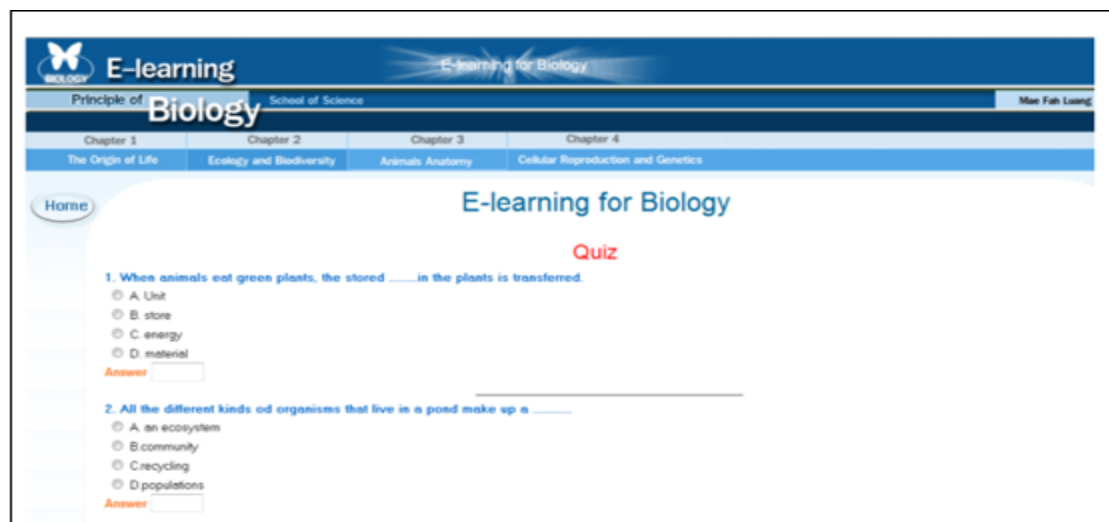


**Figure 2.1:** E-learning for Biology Homepage

It consists of 4 main chapters in biology. If user want to take the quiz, user needs to click on the map that written quiz.



**Figure 2.2:** E-learning for Biology Learning Platforms



**Figure 2.3:** E-Learning for biology quiz

If the user click quiz in the main page, the quiz page will appear like above. After the user click submit, the answer will be submitted and the correct answer will be displayed in the box beside the answer.

### 2.2.2 E-Learning SMK Baling

The figure show the example login page of e-learning of SMK Baling



The login page features a title "e-Learning SMKB" in blue. Below it are input fields for "Username" (containing "sagesblitz") and "Password" (masked with dots). A "Remember Me" checkbox is present. A blue "Log In" button is below the password field. At the bottom, there are links for "Register", "Lost your password?", and "Back to e-Learning SMKB".

**Figure 2.4:** Login page of E-learning SMK Baling

If user is new to the website, users have to register first in order to use this system.



**Figure 2.5:** Homepage of E-learning SMK Baling

This system is developed for all type of Malaysia student, starts from UPSR to STPM. This site contains past year question from almost all the state in Malaysia.



**Figure 2.6:** Download file for E-learning SMK Baling

The main objective of E-Learning SMK Baling is to help student get past year question from all over Malaysia. Anyone can upload file and share their materials after they registered. It was created for all type of student starting from PMR, SPM and STPM. There is exercise post by the school teacher where anyone can download and do the exercise. The E-Learning SMK Baling looks more like; it is created for the school student of SMK Baling but can be access by anyone whom interested in getting information about result and past year. It acts more like a blog but it is a website.

### 2.2.3 Comparison of the Existing System

**Table 2.1:** Comparison of the Existing System

Adaptive E-learning system	Availability	Version or language available	Special feature provided
<b>E-Learning for biology</b>	For all user	English	User will be able to view notes and do quiz. It is more to overseas studies. Not dynamic and doesn't have download and upload function.
<b>E-Learning SMK Baling</b>	Registered user	English, Malay	Able to integrate to the entire user. Users are able to download and upload any learning materials they can share with. More to Malaysia school based web. Doesn't have quiz function.